

## AMENDMENTS TO THE SPECIFICATION

Please amend the specification by adding the following after paragraph 10:

### **Brief Description of Figure 1**

Figure 1 demonstrates the effect of lutein enrichment on shrimp (A) before cooking and (B) after cooking. Non-enriched shrimp are shown in the top panels and their larger, more colorful, enriched counterparts are shown in the bottom panels.

Please amend the specification at paragraph 48 to read as follows, demarcating the trademark; the underlined title text was underlined in the as-filed application and does not constitute an amendment:

[048] Example 1. Production of shrimp containing high levels of DHA. Standard intensive and self-contained, semi-intensive, or extensive shrimp production systems can be used (Leung and Moss 2000; Haws and Boyd 2001). Intensive, zero-water exchange systems are preferable to produce Organic or 100% Organic high-DHA shrimp (Leung and Moss 2000). Two weeks prior to harvest date, the feeding regimen of the shrimp is altered to provide a Finishing Feed, which comprises the standard shrimp grow-out feed, plus a supplement of DHA (25 g DHA /kg feed, or 50% of total fat) provided as 200 g *Cryptothecodinium* sp./kg feed (e.g., from the algal DHA enrichment product ~~AquaGrow~~ AquaGrow<sup>®</sup> Advantage; Advanced BioNutrition Corp., Columbia, MD). Alternatively, 300 g *Schizochytrium* sp. /kg of feed (5% of total fat of feed) can be used (e.g., from Aquafauna BioMarine, Hawthorne, CA). The high-DHA shrimp are harvested using processes and practices known in the art.

Please amend the specification at paragraph 56 to read as follows, demarcating the trademark; the underlined title text was underlined in the as-filed application and does not constitute an amendment:

[056] Example 5. Production of a low-cholesterol shrimp. Standard intensive and self-contained, semi-intensive, or extensive shrimp production systems can be used (Leung and Moss 2000; Haws and Boyd 2001). Intensive, zero-water exchange systems as described in US Patent No. 6,327,996 are preferable to produce an “Organic” high-lutein shrimp. Two weeks prior to harvest date, the feeding regimen of the shrimp is altered to provide a “Finishing Feed” which comprises the standard shrimp grow-out feed but with no added cholesterol and a source of DHA-containing phospholipids (e.g., ~~AquaGrow~~ AquaGrow<sup>®</sup> DHA, a commercial product of Advanced Bionutrition Corp, Columbia, MD, USA) at a level of 50 g ~~AquaGrow~~ AquaGrow<sup>®</sup> DHA/kg feed. The low cholesterol shrimp are harvested using processes and practices known in the art.

Please amend the specification at paragraph 66 to read as follows, demarcating the trademark; the underlined title text was underlined in the as-filed application and does not constitute an amendment:

[066] Following 14 days of feeding, the shrimp were collected, frozen to -20°C and lyophilized prior to chemical analysis. A contract laboratory performed conventional HPLC carotenoid analysis with the results shown in Table 1 and Figure 1. Figure 1

demonstrates the effect of lutein enrichment on shrimp (A) before cooking and (B) after cooking. Non-enriched shrimp are shown in the top panels and their larger, more colorful, enriched counterparts are shown in the bottom panels.

Table 1. The carotenoid content of shrimp fed control diets compared to those fed Designer Diets enriched with lutein.

	AsX	Lutein	Other	Total	A/T	L/T	A/L	L+O/T
<b>Control</b>	3.59	0.46	0.25	4.30	83%	11%	7.80	17%
	4.63	0.10	0.35	5.08	91%	2%	46.30	9%
	4.51	0.22	0.33	5.06	89%	4%	20.50	11%
	4.09	0.33	0.27	4.69	87%	7%	12.39	13%
	7.44	0.10	0.48	8.02	93%	1%	74.40	7%
	5.84	0.06	0.59	6.49	90%	1%	97.33	10%
<b>Mean</b>	<b>5.02</b>	<b>0.21</b>	<b>0.38</b>	<b>5.61</b>	<b>89%</b>	<b>4%</b>	<b>43.12</b>	<b>11%</b>
<b>SD</b>	1.28	0.14	0.12	1.27	3%	4%	33.24	3%
<b>Lutein</b>	6.45	1.70	1.38	9.53	68%	18%	3.79	32%
	4.91	2.73	1.40	9.04	54%	30%	1.80	46%
	4.63	9.39	1.47	15.49	30%	61%	0.49	70%
	8.37	7.65	2.70	18.72	45%	41%	1.09	55%
	6.82	1.71	1.15	9.68	70%	18%	3.99	30%
<b>Mean</b>	<b>6.24</b>	<b>4.64</b>	<b>1.62</b>	<b>12.49</b>	<b>53%</b>	<b>33%</b>	<b>2.23</b>	<b>47%</b>
<b>SD</b>	1.36	3.24	0.55	3.91	15%	16%	1.42	15%

AsX = astaxanthin; A (astaxanthin), T (total carotenoids), L (lutein).

Example 10. Shrimp with DHA enrichment. Juvenile shrimp (1-5 g) were cultured in 20 L tanks (5-10 shrimp per tank) at 23°C using standard shrimp diet. Shrimp were fed at 0.3% body weight 2x/day for the duration of the experiment. Control diets contained Ziegler SI-35 shrimp feed (Ziegler Bros., Gardners, PA) with 6.6 g DHA/kg feed (8.4% fat; 7.7% DHA in fat; 0.66% DHA in the diet). The test diet consisted of Ziegler SI-35 shrimp diet with AquaGrow-AquaGrow® DHA (Advanced BioNutrition) replacing the fish oil component of the commercial diet.